

NASA Food Technology Commercial Space Center

How You Can Participate

Developing Food Products and Food Processing Technologies for Space and Commercial Applications

The NASA Food Technology Commercial Space Center (FTCSC), established in 1999 at the Iowa State University Research Park in Ames, Iowa, leads a national effort in developing foods and food processing technologies that enhance space missions and advance commercial food products. The NASA FTCSC and its business incubator, the Iowa State Innovation System (ISIS), are the center of a comprehensive technology transfer network. Through cooperative efforts with NASA researchers, academic researchers, and commercial companies, the NASA FTCSC nurtures technology and conveys it from the laboratory to the marketplace.

Objectives

The NASA FTCSC engages in research and development projects to fulfill the following objectives:

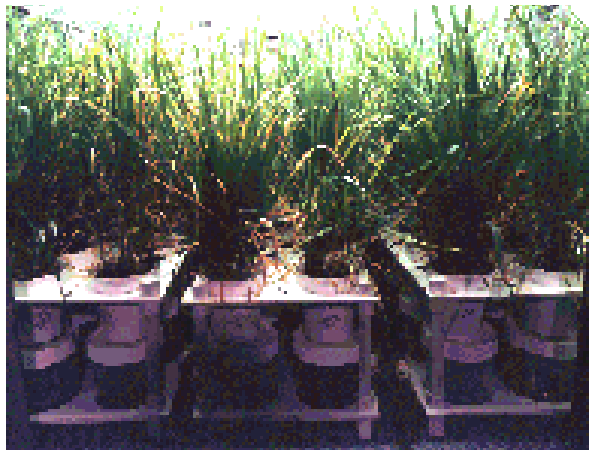
- Development of foods for 30 to 120 day space missions with a shelf life of one year.
- Development of food and food processing technologies to support human exploration of space missions of up to five years, including stored foods systems for transit vehicles and food processing systems for site-grown crops.
- Development of a commercial marketing plan for products and processes developed for the space program.

- Development of food products, food production processes, waste processing, and product safety for space and terrestrial applications.



Based on years of in-flight research on the nutritional needs of crewmembers, engineers can fashion novel approaches to growing crops in space. The potato plant shown here is flourishing with light from light emitting diodes (LEDs).

Each objective will meet NASA requirements for nutrition and safety, and considers numerous factors such as convenience and eating pleasure, as well as mission constraints of mass, power, volume, reliability, and crew time requirements.



Corporate Partners and Corporate Affiliates

An integral part of the NASA FTCSC is a core group of corporate partners and corporate affiliates. Corporate partners—who are responsible for committing research staff, facilities, and materials to specific product development projects—to date have committed \$1 million to the development of food products and food processing technologies during

the five-year project. Corporate affiliates engage with JSC in various stages of product development and commercialization. As of November 1999, the following commercial companies were participants in the NASA FTCSC corporate partners:

- Hy-Vee, Inc.
- Kraft Foods, Inc.
- Maytag Corporation

- Pioneer Hi-Bred International, Inc.
- Corporate Affiliates
- Alliant Energy
- EnzyMed, Inc.
- Equity Dynamics, Inc.
- Grain Processing Corporation
- Meredith Corporation
- Mid-American Energy

Research Facilities

Corporate Partners and Corporate Affiliates can develop research projects and arrange access to NASA research facilities and programs through the NASAFTCSC. Iowa State research facilities that will be available through the NASAFTCSC include the following:

Facility	Function
Linear Accelerator Facility	irradiation of food products
Meats Laboratory	state-of-the-art laboratory with a complete line of meat processing and cookery equipment for technology and product development
Crops Wet Pilot Plant	5,000-square-foot wet-processing facility
Crops Dry Pilot Plant	2,600-square-foot dry-processing facility
Oil Extraction Pilot Plant	900-square-foot extraction facility
Fermentation Facility	complete line of fermentation equipment
Crops Industrial Development and Technology Transfer Pilot Plan	3,000-square-foot processing and technology transfer facility
Analytical Laboratories	several service-oriented laboratories with specialized support services
Community Nutrition Unit	computer laboratory for nutrition surveys and other social science research
Human Metabolism Unit	metabolic kitchen, sample collection, and processing laboratory; dual energy x-ray absorptiometer
Test Kitchens and Sensory Laboratory	consumer and institutional kitchens; odor- and light-controlled booths; trained and untrained panels

Research Expertise

Commercial companies can form research contacts with faculty and staff of several departments and centers at Iowa State University:

Dr. Dennis G. Olson, Director

Iowa State University Research Park

email: dgolson@iastate.edu

Phone: (515) 294-1055; Fax: (515) 294-6328

Or visit the NASAFTCSC Internet site: <http://www.ag.iastate.edu/centers/ftcsc>

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